

IN THE CLAIMS:

1. (amended) A first-side optical data storage disk comprising:
a circular substrate having first and second principal surfaces;
a first metal/alloy layer overlying said the first principal surface of said the substrate;
a first transparent layer overlying said the first metal/alloy layer, the first transparent
layer having a thickness of greater than 15 microns; and
a second metal/alloy layer overlying said the first transparent layer; and
a first optical coupling layer overlying the second metal/alloy layer, wherein the
thickness of the first optical coupling layer is substantially less than the thickness of the first
transparent layer, the first-side optical disk having an absence of additional layers overlaying
the first optical coating such that the first optical coupling layer functions to optically couple
the second metal/alloy later to the first-side optical disk's operating environment -wherein
~~each of said metal/alloy layers is adapted to be read by a laser beam that does not pass~~
~~through said substrate.~~

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2. (original) The first-side optical data storage disk of Claim 1 wherein said first principal surface of said substrate comprises premastered data which includes a series of pits and/or bumps, said first metal/alloy layer conforming to the shape of said pits and/or bumps.

3 (original) The first-side optical data storage disk of Claim 2 wherein the transmissivity of said second metal/alloy layer at the wavelength of said laser beam is greater than 10%.

4. (original) The first-side optical data storage disk of Claim 2 wherein said first metal/alloy layer contains a writeable area.

5. (original) The first-side optical data storage disk of Claim 1 wherein said first metal/alloy layer contains a writeable area.

6. (original) The first-side optical data storage disk of Claim 5 wherein the transmissivity of said second metal/alloy layer at the wavelength of said laser beam is in the range of 25% to 50%.

7. (original) The first-side optical data storage disk of Claim 5 wherein said second metal/alloy layer contains a writeable area.

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8. (original) The first-side optical data storage disk of Claim 1 wherein said second metal/alloy layer comprises premastered data which includes a series of pits and/or bumps.

9. (original) The first-side optical data storage disk of Claim 1 wherein said second metal/alloy layer contains a writeable area.

10. (original) The first-side optical data storage disk of Claim 1 wherein said first metal/alloy layer comprises aluminum.

11. (original) The first-side optical data storage disk of Claim 10 wherein said second metal/alloy layer comprises SbInSn.

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12. (amended) The first-side optical data storage disk of Claim 1 comprising:

a third metal/alloy layer underlying said second principal surface of said single substrate;

a second transparent layer underlying said third metal/alloy layer, the second transparent layer having a thickness of greater than 15 microns; and
a fourth metal/alloy metal/alloy layer underlying said second transparent layer; and
a second optical coupling layer overlying the fourth metal/alloy layer, wherein the thickness of the second optical coupling layer is substantially less than the thickness of the second transparent layer, the first-side optical disk having an absence of additional layers underlaying the second optical coating such that the second optical coupling layer functions to optically couple the fourth metal/alloy later to the first-side optical disk's operating environment.

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13. (original) The first-side optical data storage disk of Claim 12 wherein said second principal surface of said substrate comprises premastered data which includes a series of pits and/or bumps in said substrate, said third metal/alloy layer conforming to the shape of said pits and/or bumps.

14. (original) The first-side optical data storage disk of Claim 13 wherein said third metal/alloy layer contains a writeable area.

15. (original) The first-side optical data storage disk of Claim 12 wherein said second metal/alloy layer comprises premastered data which includes a series of pits and/or bumps.

16. (original) The first-side optical data storage disk of Claim 15 wherein said second metal/alloy layer contains a writeable area.

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17. (original) The first-side optical data storage disk of Claim 13 wherein said second metal/alloy layer contains a writeable area.

18. (original) The first-side optical data storage disk of Claim 1 wherein said substrate comprises polycarbonate.

19. (original) The first-side optical data storage disk of Claim 1 wherein said first transparent layer comprises a photopolymer resin.

20. (original) The first-side optical data storage disk of Claim 1 wherein said first transparent layer comprises a curable polymer.

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21. (original) The first-side optical data storage disk of Claim 1 wherein said first transparent layer comprises a UV curable material.

22. (original) The first-side optical data storage disk of Claim 1 wherein said substrate has a thickness in the range of 200 to 1000 μm .

23. (original) The first-side optical data storage disk of Claim 22 wherein said substrate has a thickness of approximately 500 μm .

24. (original) The first-side optical data storage disk of Claim 1 wherein said first transparent layer has a thickness in the range of 15 to 200 μm .

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25. (original) The first-side optical data storage disk of Claim 24 wherein said first transparent layer has a thickness of approximately 50 μm .

26. (original) The first-side optical data storage disk of Claim 1 comprising a protective coating between said first metal/alloy layer and said first transparent layer.

27. (cancelled)

28. (cancelled)

29. (cancelled)

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30. (original) The first-side optical data storage disk of Claim 1 wherein the reflectivity of said first and second metal/alloy layers at the wavelength of said laser beam is greater than 25%.

31. (original) The first-side optical data storage disk of Claim 1 wherein said disk is less than 50 mm in diameter.

32. (original) The first-side optical data storage disk of Claim 31 wherein said disk is at or below 32 mm in diameter.

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33. (original) The first-side optical data storage disk of Claim 1 wherein said first metal/alloy layer is a read-only layer and said second metal/alloy layer comprises a writeable area, said

writeable area comprising a code which permits access to a portion of data recorded on the first metal/alloy layer.

34. (original) The first-side optical data storage disk of Claim 33 wherein said coded permits access to a portion of data recorded on the second metal/alloy layer.

35. (amended) A method of reading data from the first-side optical data storage disk of Claim 34 comprising:

providing an first-side optical disk including:

a single substrate having first and second principal surfaces;

a first metal/alloy layer overlying the first principal surface of said substrate;

a first transparent layer overlying the first metal/alloy layer, the first transparent layer having a thickness of greater than 15 microns;

a second metal/alloy layer overlying the first transparent layer; and

a first optical coupling layer overlying the second metal/alloy layer, wherein the thickness of the first optical coupling layer is substantially less than the thickness of the first transparent layer, the first-side optical disk having an absence of additional layers overlaying the first optical coating such that the first optical coupling layer functions to optically couple the second metal/alloy later to the first-side optical disk's operating environment;

directing a laser beam from above the principal surface of the substrate towards the first and second metal/alloy layers such that the laser beam is partially reflected from and partially transmitted through the second metal/alloy layer;

detecting a first portion of the laser bean that is reflected from the first metal/alloy layer; and

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detecting a second portion of the laser beam that is reflected from the second metal alloy layer.

Claims 36-57. (cancelled)

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